

Application No. 10/575319
Responsive to the office action dated December 9, 2009

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Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Currently Amended) A nonaqueous electrolyte secondary battery comprising:
a nonaqueous electrolyte and a positive electrode that occludes lithium ions reversibly,
wherein the positive electrode ~~includes~~ comprises an active material layer and a sheet-like collector that supports the active material layer,
the collector ~~contains~~ comprises a first layer containing aluminum and at least one element other than aluminum, and a second layer and a third layer both consisting essentially of aluminum, and
the second layer and the third layer being disposed on opposed sides of the first layer, and
an average composition that is obtained by averaging a ratio of elements composing the collector in a direction of thickness of the collector is equal to a composition of an alloy whose liquidus temperature is 630°C or lower.
- 2-5. (Canceled)
6. (Currently Amended) The nonaqueous electrolyte secondary battery according to claim 1, wherein the at least one element is at least one element selected from the group consisting of magnesium and silicon.
7. (Currently Amended) The nonaqueous electrolyte secondary battery according to claim 6, wherein ~~the~~ a content of the magnesium is in a range of 5.5 to 96.0 wt.% in the average composition.

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8. (Currently Amended) The nonaqueous electrolyte secondary battery according to claim 6, wherein ~~the~~a content of the silicon is in a range of 5.1 to 16.3 wt.% in the average composition.
9. (Currently Amended) The nonaqueous electrolyte secondary battery according to claim 6, wherein ~~the~~a total ~~of the contents of~~ the aluminum, the magnesium, and the silicon is at least 99.5 wt.% in the average composition.
10. (Currently Amended) The nonaqueous electrolyte secondary battery according to claim 1, wherein the collector has a surface formed of at least one layer selected from the group consisting of the second layer and the third layer-aluminum.
11. (Original) The nonaqueous electrolyte secondary battery according to claim 1, wherein a protective layer is formed on a surface of the collector.
12. (Original) The nonaqueous electrolyte secondary battery according to claim 11, wherein the protective layer is an oxide layer.
13. (Original) The nonaqueous electrolyte secondary battery according to claim 11, wherein the protective layer has a liquid-repellent property.
14. (Original) The nonaqueous electrolyte secondary battery according to claim 1, wherein the average composition is equal to a composition of an alloy whose liquidus temperature is between 250°C and 630°C.
15. (New) A nonaqueous electrolyte secondary battery comprising:
a nonaqueous electrolyte and a positive electrode that occludes lithium ions reversibly,
wherein the positive electrode comprises an active material layer and a sheet-like collector that supports the active material layer,

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the collector comprises an aluminum sheet consisting essentially of the aluminum and a plurality of island regions dispersed in the aluminum sheet, and
the island regions contain at least one element other than aluminum, and
an average composition that is obtained by averaging a ratio of elements composing the collector in a direction of thickness of the collector is equal to a composition of an alloy whose liquidus temperature is 630°C or lower.

16. (New) The nonaqueous electrolyte secondary battery according to claim 15, wherein the at least one element is at least one element selected from the group consisting of magnesium and silicon.

17. (New) The nonaqueous electrolyte secondary battery according to claim 16, wherein a content of the magnesium is in a range of 5.5 to 96.0 wt.% in the average composition.

18. (New) The nonaqueous electrolyte secondary battery according to claim 16, wherein a content of the silicon is in a range of 5.1 to 16.3 wt.% in the average composition.

19. (New) The nonaqueous electrolyte secondary battery according to claim 16, wherein a total content of the aluminum, the magnesium, and the silicon is at least 99.5 wt. % in the average composition.

20. (New) The nonaqueous electrolyte secondary battery according to claim 15, wherein the collector has a surface formed of the aluminum.

21. (New) The nonaqueous electrolyte secondary battery according to claim 15, wherein a protective layer is formed on a surface of the collector.

22. (New) The nonaqueous electrolyte secondary battery according to claim 21, wherein the protective layer is an oxide layer.

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23. (New) The nonaqueous electrolyte secondary battery according to claim 21, wherein the protective layer has a liquid-repellent property.

24. (New) The nonaqueous electrolyte secondary battery according to claim 15, wherein the average composition is equal to a composition of an alloy whose liquidus temperature is between 250°C and 630°C.